Atty Docket No.:31583-212399 Applicant: Konrad WISSENBACH

Appl. No.: 10/519146

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0016] of the published application with the following paragraph:

[0016] The present method is made more apparent in the following using a preferred embodiment with reference to the accompanying drawings without the intention of limiting the scope or spirit of the inventive idea. The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Please replace paragraph [0017] of the published application with the following paragraph:

[0017] FIG. <u>la</u> shows a schematic sketch of the scanning of the to-be-smoothed surface using a laser beam and FIG1b shows an example of a cross-section of the laser beam;

Please replace [0025] of the published application with the following paragraph:

[0025] FIG. 9a and FIG. 9b show an example of smoothing a surface using the present method while retaining structures of significance.

Please replace [0026] of the published application with the following paragraph:

[0026] FIG. 1a shows very schematically the treatment process in the present method by scanning the surface 1 of the to-be-treated workpiece 2 with a laser beam 3. The laser beam 3 is led in parallel paths 6, preferably meandering, over a section 4 of the to-be-treated surface 1. The width 5 (track width) of the individual paths 6 is given by the

Applicant: Konrad WISSENBACH Appl. No.: 10/519146

diameter 7 of the laser beam on the surface 1. In order to obtain a suited intensity or track width, this beam diameter 7 may, of course, be adapted with the aid of a interconnected optic. The laser beam 3 is led over the surface 1 in the direction indicated by the arrow with a given scanning velocity. Adjacent paths 6 overlap by selecting a track offset 8 which is smaller than the track width 7. The length 9 of the individual paths 6 can be predefined. It is, however, limited by the laser scanning system employed. Therefore, in order to treat large surface areas, a multiplicity of shown sections 4 have to be treated successively. FIG. 1 also, indicates, by way of example a first remelting depth 10 down to which the workpiece 2 is remelted in the first treatment step of the present method. In addition to a round beam cross section, another beam cross section 7a, for example rectangular respectively linear can, of course, also be employed as is indicated by way of example in the lower part of FIG. 1b.

Please replace [0029] of the published application with the following paragraph:

[0039] With suited selection of the treatment parameters, surfaces can also be polished in such a manner that the structures of significance present in a surface are retained, undesired micro-roughness, however, is removed. By selecting the treatment parameters, in particular the first remelting depth, it can be set which structure of the surface are smoothed and which are to remain. Thus, for example, an eroded surface can be polished to a high gloss while retaining the erosion structure and in this way producing grained surfaces for injection mold tools, as is shown, for example, in FIG. 9a and FIG. 9b. The upper section of the figure Figure 9a shows an eroded, unpolished surface with corresponding structures of significance 19 and micro-roughness 15. The lower section Figure 9b shows the same eroded surface after smoothing according to the present method. It is clearly visible that the micro-structures have been completely removed and but that the structures of significance 19 are still present. Changing the treatment parameters during treatment results in varyingly strongly smoothed structures, and in this way different gray hues can be realized, for example for creating inscriptions on a surface.